

A little less conversation, a little more texting please - A blended learning model of using mobiles in the classroom

Claire Bradley¹, Mimi Weiss², Caroline Davies² Debbie Holley³

¹Learning Technology Research Institute, London Metropolitan University, 35 Kingsland Road, London,
E2 8AA, UK c.bradley@londonmet.ac.uk

²Teaching and Learning Technology Centre, London Metropolitan University, 166-220 Holloway Road, London,
N7 8DB, UK m.weiss@londonmet.ac.uk, caroline.davies@londonmet.ac.uk

³Debbie Holley, London Metropolitan University Business School, Stapleton House, 277-281 Holloway Road London N7 8HN d.holley@londonmet.ac.uk

Abstract: This paper reports on three case studies of use of the TxtTools Mobile phone texting system by lecturers in different subject disciplines: Business Studies, Computing and Sports Science. The lecturers were seeking to have a richer blend of technologies to support their students, and the mobile technology is combined within traditional student lectures and seminars as well as some interesting developmental uses outside the classroom. The findings show that there has been a very positive response from students, and that the system can be effective in a number of ways, including engaging more students within lectures. This blended learning approach has given a voice to a large number of students intimidated by a classroom or group environment, enabling them to ask questions, put forth an opinion and interact with fellow group members in a dynamically technological manner.

Keywords: mobile learning, student engagement, mobile phones, evaluation

Introduction

TxtTools is an online application which allows SMS text messages to be sent [www.txttools.co.uk]. The messages can almost instantly be viewed via a PC. The system allows students to text comments, questions or opinions to a teacher before, during or after a lecture. The lecturer needs a TxtTools account and a computer with internet access. The students need a mobile phone, credit and network reception. All messages that are received are anonymous. The software has capabilities for both sending and receiving text messages via a computer. The students responses can be

viewed by the lecturer as they come in, and can be projected for the class to see them if desired. For our study we have concentrated on inbound text messaging only.

The text system was piloted for six months through the Teaching and Learning Technology Centre at London Metropolitan University. The goal was to evaluate how useful it would be in supporting teaching and learning, and specifically in how it could encourage students to engage more within the teaching and learning process.

This paper will explore the rationale, support and evaluation of the TxtTools pilot. Three case studies of use will be presented which cover different subject disciplines. Each study has yielded useful data regarding the use of TxtTools at the university and has provided valuable feedback for our pilot study.

Background and rationale for the project

In common with many UK Universities, in the past decade class sizes have risen as the unit of resource has declined as young people from a wide variety of backgrounds began to enter Universities (Bennett 2002). This project focuses on a key issue for the three academics concerned in this pilot that of large class sizes. For some subject areas it is not unusual to have in excess of 240 students in one lecture. An interview with Holley (2009) indicated that this type of learning environment can be intimidating to shy students and thus not meet their educational needs. Another issue identified was that the student body is made up of a high proportion of international students who are often hesitant to communicate in class because English is their second language. Chalk (2009) spoke about a significant minority of computing students lack of engagement with the lecture material as an issue in the large lecture.

The project team aimed to use TxtTools to support the staff in their efforts to engage students and energize the lecture, potentially enabling all students to ask questions in an anonymous and therefore non threatening environment. It was our belief that this system would reduce any fears that students might have about conveying their thoughts or opinions. We also hoped that the system would also excite the students by giving them a new way of connecting and engaging with their lecturer and fellow classmates. This would enable lecturers to develop their 'blend' of learning in the classroom, thus doing more than what Collis & Moonen (2001) refer to as 'stretching the mould'. Potentially, the system could encourage communication and in turn enhance their student learning experience.

Another motivating factor behind this work was to utilise the ubiquitous mobile technologies for learning purposes that we know students have. A survey conducted with the Business Studies student cohort in October 2008 showed that they all owned a mobile phone (Bradley & Holley 2010). Whilst the range of phones that they own was shown to be broad (i.e. some have iPhones and some have basic phones with black and white screens) they are all capable of sending and receiving SMS messages. Students are also becoming open to using their mobiles for teaching and learning. In the same survey, 41% said they would find it useful to be able to access learning materials via

their mobile (34% were uncertain), and 60% viewed the University contacting them via their mobile for learning purposes as a positive aspect. 19% of the students said that they currently use their mobiles to help with learning, and uses ranged from using the Internet to get information and for research, to contacting other students, using SMS and recording lectures. We have evidence from another study into student's use of mobile technologies for learning, that the use of such technologies can act as a motivating factor for students to engage in learning activities (Smith et al, 2007). Furthermore, mobile devices have a number of "unique educational affordances such as increasing portability, functional of technological devices, social interactivity, context sensitivity, connectivity and individuality" (Holley et al 2010:301). So TxtTools was seen as a very inclusive approach to engage as many students as possible in face-to-face teaching scenarios, using their own technology and communication methods which they already know how to use.

Supporting teaching staff and collecting data

Interested lecturers agreed to undertake a short 1-hour training session on using the software and also to provide evaluation data. To support the lecturers after their training and throughout the semester the learning technologists created an online discussion using the University's virtual learning environment (VLE). A session was held half way through the semester to support staff and gain and share valuable feedback on their experiences to date. At the end of the pilot the lecturers and students who participated were surveyed to gather data.

Case studies of use

Case studies follow from three lecturers from different subject disciplines who were involved in the pilot project. They have been selected for this study because they have given a lot of personal feedback from their experience and have also evaluated the experience with their students.

Case Study 1: Computing

The lecturer in the Faculty of Computing offers courses on Information Technology, where diverse students are taught in large groups of approximately 60 students. He wanted to see "whether it would encourage more students to engage in the lecture and module more generally" and if the messages would "demonstrate reflective writing and/or critical thinking." He used TxtTools to gather feedback, collect opinions and receive questions.

TxtTools was used to gather questions and feedback at any time during the lecture, practical and tutorial. He made the students aware of the phone number and how to use the system. He informed the students that they could text him at any time to raise questions, comments or concerns. He took an open ended approach by allowing the students to decide how they would use the system. If any useful questions or comments arrived after the class had finished, he would address them in the following lecture.

Case Study 2: Sports Science

The lecturer in the School of Health and Human Sciences teaches courses on Science for Sport. He took part in the TxtTools project to see if texting might be a good alternative to traditional communication within the classroom. He thought that the technology would open up “greater sensitivity to shades of meaning” which might be missed in a typical lecture scenario.

He used TxtTools with two student groups, one first^t year and one second year, to gather feedback, collect opinions, receive questions and get student responses to lecturer questions. In one week he incorporated TxTTools in the last 10 minutes of each class. Students were given a handout containing two or three multiple choice questions. The questions were based on information presented in the preceding lecture. Discussion afterwards focused on talking about the incorrect answers, and trying to understand why some of the options were chosen. In another week he asked the students to text their questions and thoughts about the lecture material, which would be answered/discussed at the end of the lecture. He let the students know that they could text him at any point during the class or the break. He also encouraged the students to use the break to discuss these questions with other students.

Case Study 3: Business Studies

The Business Studies lecturer used TxtTools within the first-year Studying Marketing and Operations module. She teaches large groups of diverse students, with an average class size of 50-60 students. She took part in the TxtTools pilot to see if she could “engage first year students with the lecture material in a way that encouraged them to interact with their peers and ‘settle’ them into a large lecture experience”[Holley 2009]. TxtTools was incorporated into large group lectures to collect students opinions and to get student responses to lecturer’s questions.

Several different approaches to using TxtTools were taken. Students were asked specific questions at points during the lecture and instructed to text in the answer. In one example; the students were asked to text in what they thought were “the biggest world brand in terms of value in Sterling”. Another approach was to get students views or opinions on aspects of marketing. For example, she displayed advertisements and asked the students who the target market was for the advert. A major concern of the lecturer was that the students might be worried about the cost of sending the texts. As a solution to this, students were grouped with other students who had text bundles and were happy to use them. Students were asked questions and one person in the group (normally the person with text bundles) would text the answer. In some groups students took turns to send the text.

Evaluation results

Evaluation data has been gathered from both students and lectures. Ongoing feedback from lecturers was provided via the online discussion board in the supporting VLE for the pilot, and from the support session held half way through the semester. At the end of the pilot lecturers and students completed a questionnaire. Some of the evaluation results from both students and lecturers are included in this section. They are discussed in the following section.

Data from the student questionnaire

67 Computing and Sports Science students completed the questionnaire (the Business Studies lecturer chose another method of getting student feedback). They were asked if they were concerned about the cost of using texting in the classroom, and 37% of Computing students and 50% of Sports Science students answered 'yes', giving a majority of students (60%) answering 'no'. Of the 67 students who completed the questionnaire, 27 said that they had not used texting in the classroom, and their responses have been filtered out from the results to the questions that follow. However their reasons for not sending a text is revealing. 10 students didn't have a question to ask or had no need to use it (they understood everything). Two of these students said that they preferred to ask questions after the lecture or in the tutorial class. 9 comments were made about being concerned about the cost of sending the messages, or they did not have credit on their phones. 2 students said that they preferred to ask a question directly to a person. Two students felt it could be distracting: "because it would distract me"; "concentrating on the lecture instead and ask lecturer quickly if needed". One student doesn't have a mobile at the moment but said "but I really support the idea and would recommend it to others", and 2 didn't have their mobiles with them.

The results from the quantitative questions from the 40 students who said they sent text messages follow. Nearly all the students found the system easy to use, between 93.3% and 95.5%. The results from the other questions appear in the following tables.

			Computin g	Sports Science	Total
	No	Count	2	5	7
		% within Tutor	14.3%	20.8%	18.4%
	Yes	Count	12	19	31
		% within Tutor	85.7%	79.2%	81.6%
Total		Count	14	24	38
		% within Tutor	100.0%	100.0%	100.0%

Table 1: Did you like using texting in the classroom?

		Computing	Sports Science	Total
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	No	Count	5	6	11
		% within Tutor	35.7%	25.0%	28.9%
	Yes	Count	9	18	27
		% within Tutor	64.3%	75.0%	71.1%
Total		Count	14	24	38
		% within Tutor	100.0%	100.0%	100.0%

Table 2: Did texting help you to interact with the learning material?

			Computing	Sports Science	Total
	No	Count	3	11	14
		% within Tutor	21.4%	45.8%	36.8%
	Yes	Count	11	13	24
		% within Tutor	78.6%	54.2%	63.2%
Total		Count	14	24	38
		% within Tutor	100.0%	100.0%	100.0%

Table 3: Did texting help you to understand the material being discussed in the classroom?

			Computing	Sports Science	Total
	No	Count	0	4	4
		% within Tutor	0%	19.0%	11.4%
	Yes	Count	14	17	31
		% within Tutor	100.0%	81.0%	88.6%
Total		Count	14	21	35
		% within Tutor	100.0%	100.0%	100.0%

Table 4: Would you like to use texting in the classroom again?

Feedback from the Business Studies students

Feedback from the Business Studies students has been via a post-it note exercise, in which the lecturer asked two student groups in week eight to write feedback on a post-it

note about whether they liked or disliked using TxtTools. 55 responses were received (table 5 contains a selection of comments about what they liked). Categorising the student responses into whether or not their comment was positive, shows that 86% of students had a positive view towards using TxtTools, 7% had a negative view, 5% were unsure and 2% were neutral (because they hadn't used it). Analysing the comments using grounded theory (Strauss and Corbin, 1990) shows that a number of recurring comments and themes emerge. 5 students said it was 'useful', 4 'helpful' 7 said they 'liked' it, 7 thought it was 'interesting' and 6 'fun'. 8 students made comments about the system being interactive and that it encouraged 'interaction', 4 commented that it encouraged all students to ask questions, and 4 said that it encouraged engagement and participation. 3 students liked being able to see the other students' responses to the questions posed. Negative comments mainly related to the cost of sending the messages. Two students said they preferred to communicate face-to-face or within a group. One interesting negative view was that sending the messages was time consuming, and mentioned by 4 students. However, comments made by 7 students indicated that they would like to continue using the texting system, even though they weren't directly asked about this.

What students like about TxtTools

Combining responses from students in the questionnaire about what they like about TxTTools with the comments made by the Business Students shows why they liked it and how it was useful within their classes (n=115). Some of the comments are included in Table 5 below.

Computing students

Because its easy to ask straight away when you have a question. You don't have to interrupt the lecturer and avoid disturbing others.

I believe that texting in the classroom is an effective form of students learning. For example, some may feel shy or stupid to ask a certain question, therefore texting will enable people to ask questions anonymously.

I do like using texting in the classroom because it set a high standard of interaction between the tutor and the student in a simple manner.

It helped me to understand the different angles of thinking of other students. The way you look at something has an impact on the way you comprehend it.

I enjoyed using texting because it is easy to use and it saves a lot of time because instead of the lecturer going around the whole class to find out everyones answers, txttools is a much easier and organised way of collecting people's answers/questions.

Normally students are not allowed to text in the classroom - being allowed to do that was quite entertaining and actually gave me the answer to my question.

I like texting in class because it helps to interact in the classroom using modern techniques rather than asking directly to the lecturers.

Sports Science students

It involved everyone and helped change the thought process.
 I believe it allowed everyone to give their opinion relatively quickly.
 Its revolutionary type of answering.
 It was an interesting change to teaching methods.
 I enjoy texting so it added a bit of fun to the lesson.
 It made the lecture more interactive. It prevents chaos in the room which happens when everyone starts shouting their answers individually.
 It was easy and fun.
 It is good to make the lecture more dynamic.
 Anonymous, instant answer to collate in class.

Business Studies students

It is quite useful for the beginning of the course to help us understand the module.
 Helps engage concentration at start
 A good way to break the ice.
 Interesting way to stimulate minds
 It is a creative and interesting way of looking at responses
 Very good way to communicate answers on a large scale.
 I really like it because it's a good and interesting way to interact with the class!
 This is a good way to keep our attention!
 It's an interesting tool as it allows everybody not only to express their opinion and give their answers but also allows everybody else in the classroom to see how others answer the same questions.
 It is good for people to text their opinions and answers if they are perhaps reluctant to put up their hand in front of the class.
 I think that this is a very good way for us students to be able to express ourselves freelier with the teacher

Table 5: What students liked about TxTTools

Feedback from lecturers

Overall, the lecturers thought that the system easy to use and administer and found that the messages came into the system quickly for viewing. Interviews with the lecturers (May 2009) indicated that all had found the system to be a flexible and interesting solution. They all agreed that it was a flexible, portable solution.

The Computing lecturer felt quite positive about the TxtTools experience and felt that it enhanced the students' learning experience. He felt that the students gained from the experience and as a communication medium it worked well to "meet the complexity of modern students' life styles". As a result he expressed his belief that the system has a great deal of potential to reach students on many levels. He did feel, however, that he

could have used the system more efficiently by asking specific questions, getting the students into groups and facilitating more discussion based on the messages sent in. He would like to continue to use TxtTools to test out a variety of different techniques and pursue his goal of encouraging students to engage in reflective writing and/or critical thinking.

The Sports Science lecturer did not have a positive reaction to the use of TxtTools. He did not feel that there was enough student uptake: students did engage in first multiple choice question exercise, but no students responded the first time he asked them to text in questions/thoughts during the lecture. He did ask the students why they did not engage and did not get a response. One student commented afterwards that she did not have any credit, and some students reported that at times there was no mobile reception. The lecturer did agree that it was easy to use, but overall he was not keen on using it again due to his impression that there was a lack of uptake, it didn't enhance the students' learning experience and because "for every use I have put txtng to there exists a more effective alternative".

The Business Studies lecturer felt that TxtTools did enhance the learning experience. She stated "It means the students are in control and they have the option of joining in or not". Adult students like to know that they have input and some control over their learning, and TxtTools allows them to take some ownership of their learning. In meeting her goal of getting the students to interact with the lecture material and their peers, she said "it really got the students chatting to each other and considering their possible answers to the questions posed". Communication between students was increased because she put them into groups of 3 so that just one person could text back the answer, to share the cost involved. She liked that the system was easy to use and access, and felt that it was better than classroom clickers "which have to be carried to the lecture theatre, handed out, explained, counted in, and taken back". Most students have their mobile phone with them and they already know how to use it, which means that using TxtTools is quicker and easier than using the classroom clickers. She feels that TxtTools has a place in the classroom and she would like to use it in the future.

Discussion of results

Computing

86% of the Computing students who said they used it, liked using TxtTools. Students appreciated the fact that they could ask a question without disrupting the lecture. They also liked that sending questions was anonymous, and also felt that it removed the fear of appearing dumb in front of their classmates, a factor that could benefit weaker students and students who lack confidence in their English language capabilities. Many students felt that texting saved them time. They could text a question instead of asking verbally which often takes longer in a large classroom, plus they could ask the question at the point at which it was pertinent, rather than having to wait for a convenient moment. 64% thought that texting helped them to interact with the learning material. Some students commented that the interaction between the teacher and student

increased because it was easy for everyone to send questions as they arose. One said “it set a high standard of interaction between the tutor and the student in a simple manner”. The lecturer also often projected the anonymous questions that were sent in by students, and by doing this, the students felt that they got a wider view of different perspectives. One student commented that it helped them to “understand different angles of thinking of other students.” If the lecturer noticed that misunderstanding occurred, he would re-explain something. The students liked this aspect.

About a third of the students (37%) were concerned about the cost of sending messages, which would affect those on Pay as You Go plans or those with a low number of inclusive texts. But the majority of students who sent messages felt that it helped them to understand the material being taught (79%), and all of them would like to use TxtTools again. The lecturer was also positive about the results and felt that it enhanced the student’s learning experience. He is keen to use it again, but learning from the effectiveness of the application with business Studies students, would like to use the system more efficiently by asking more specific questions and introducing small group discussions around the responses sent in.

Sports Science

The reaction of the Sport Science students’ was also positive. 80% of the 40 students who completed the questionnaire used the system and 79% of those who used it, liked it. Many students observed that TxtTools was fun and interactive. One said that it was a “revolutionary type of answering” system, and another said it made the lecture “more dynamic”. 75% thought that texting helped them to interact with the learning material, and 54% thought it helped them to understand the material being discussed. Many of the comments made were similar to the other student groups, such as it allowed everyone to give their opinion, and because it is anonymous you can participate if you are shy, or without feeling stupid. One student said, “it prevents chaos in the room which happens when everyone starts shouting their answers individually”. Some did feel that the system could have been better utilised and a few felt that they did not have a question to text so they did not use the system. The cost was a concern for 50% of the students, however 73% did feel that they would like to use it again. The lecturer however, felt that the students did not sufficiently engage in responding to the activities he introduced, and that it did not enhance their learning experience within the lectures. He does not intend to use it again, believing that there are more effective ways of achieving his aims to engage students in lectures.

Business Studies

The Business Studies students were extremely positive about the use of TxtTools in their lecture. 86% of the students liked the use of this technology and several stated they are interested in using it again in the future. They felt that TxtTools was interactive, fun and engaging. Several made comments about the technology being “different” to what they were used to. There is evidence from some students’ comments that the lecturer’s goals of engaging them and also encouraging them to interact with their peers was achieved. One said, it was “a good way to break the ice”, and another “I really like it

because it's a good and interesting way to interact with the class!". On engagement one said TxtTools "encourages lecture participation" and other comments were "helps engage concentration at start", and "interesting way to stimulate minds". Some students enjoyed the fact that they had input in their lecture and they found that it increased communication and interaction between the lecturer and the students. One student said "I think that this is a very good way for us students to be able to express ourselves freelier with the teacher". They also liked being able to see other student's contributions and responses. The lecturer was pleased with the results and believes that it did enhance the learning experience for the students and therefore would like to use it again. Because of the way she integrated it into the lecturer, putting the students in small groups to discuss answers (partly a response to reduce the cost burden of sending texts) she said afterwards "it really got the students chatting to each other and considering their possible answers to the questions posed".

Conclusions

The six-month TxtTools pilot evaluation has revealed some interesting feedback on its use. Student feedback is very positive, and it is evident that they enjoyed using 'different' and what was perceived to be 'modern' technology as part of their learning experience. In the three case studies the statistics show that between 79-86% of the students liked the use of TxtTools (Computing and Business Studies students both rated 86%). There was some concern about the cost of sending texts. This was the most common complaint with 50% of Sports Science students and 37% of Computing students saying they were not happy about the cost, although these statistics show that the number concerned were in the minority. Obviously students on Pay as you Go mobile plans and low text bundles would be most affected by the issue of cost.

Comments from Computing and Sports Science students about being able to text in questions during a lecture indicate a number of benefits for both the lecturer and the students. Students can text in their questions in an anonymous and non-threatening manner. The lecturer isn't disturbed as the questions are raised, and the flow of the lecture is not disrupted. The lecturer is presented with a good overview of what the students do not understand, and can address these issues. The students benefit from having their questions answered, and from seeing what other students are thinking, which gives them a broader view of what others are thinking. It was also shown to be an easy and quick way of sharing student responses, especially with large groups.

From the lecturers point of view it has proven to be an easy to use, versatile system. Two were pleased with the experience and the results they received from their students. Both the Business Studies and Computing lecturers felt that TxtTools was a positive addition to their class and felt that they benefited by increasing the communication that they have with their students: TxtTools opened up a new arena in which to communicate and interact within the classroom. They felt that it has a great deal of potential for future use. The Sports Science lecturer was not convinced that this was a system worth using. His students however, disagreed, as 73% would like to use it again, but some did say that it could have been better utilised. The Business Studies lecturer was so convinced

of the benefits experienced by using TxtTools, that she has successfully persuaded the Business School to continue funding the system for another semester.

Success may depend on what the system is used to support. However, as a tool incorporated into the blend of teaching strategies it can be an effective way of introducing fun, interaction and engagement in a different way into classes, and can provide higher levels of student-lecturer interaction, and opportunities for students lacking confidence to participate more within lectures.

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